



# Forty years later: distribution of the introduced Heath Snail, *Xerolenta obvia*, in Ontario, Canada (Mollusca: Gastropoda: Hygromiidae)

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**Abstract:** *Xerolenta obvia* is a Central European land snail that has been introduced to Ontario, Canada, where it was first recorded in the literature in 1975 from a single population at Bethany (City of Kawartha Lakes). Over the four decades since that publication, additional records have been found clustered near Bethany, within the City of Kawartha Lakes, neighbouring Peterborough and Northumberland counties, as well as the Regional Municipality of Durham. Two distant sites are also now known, one in rural Ottawa (southeastern Ontario), and one at Windsor, Essex County (southwestern Ontario).

**Key words:** terrestrial gastropod, introduced species, new records

Four decades ago in *The Canadian Field-Naturalist*, Grimm and Wiggins (1975) reported the first North American records of the introduced Heath Snail, *Xerolenta obvia* (Menke, 1828)<sup>1</sup> (Figures 1 to 3), from the vicinity of Bethany, Victoria County (now City of Kawartha Lakes), Ontario, Canada. The native range of *X. obvia* is mainly in Central Europe, but this species also occurs west to southern France, east to Ukraine and European Turkey, and south to Greece (Kerney et al. 1983; Schütt 2005; Welter-Schultes 2012). At Bethany, Ontario, *X. obvia* had been found by Wiggins as early as 1969, but locals knew of the snails as early as 50 or perhaps 70 years before at a farm just west

of the village centre (Grimm and Wiggins 1975). For three decades, the only published North American record of *X. obvia* (then reported as *Helicella obvia*) was this Bethany population, but more recently, *X. obvia* has been found in the United States, first at Detroit, Michigan, in 2001 in a Canadian Pacific rail yard (Robinson and Slapcinsky 2005) and most recently in Cascade County, Montana (Montana Natural Heritage Program 2013). *Xerolenta obvia* is ranked moderately high in a list of terrestrial gastropod species that are potential major pests (Cowie et al. 2009). In the last several years, the continuing existence of the Bethany population has been confirmed (Grimm et al. 2010) and somewhat chance encounters of this species by biologists, naturalists, and landowners, have added several new records. As details of these occurrences are mostly unpublished, this paper reports the currently known sites of *X. obvia* in Ontario, which are also the only known sites in Canada.

New distributional data for this species were gathered over several years, either as a result of our own general field collections of terrestrial Mollusca or through our contacts with others (Table 1). Because of the disparate sources of these new records, data collection methodologies differ.

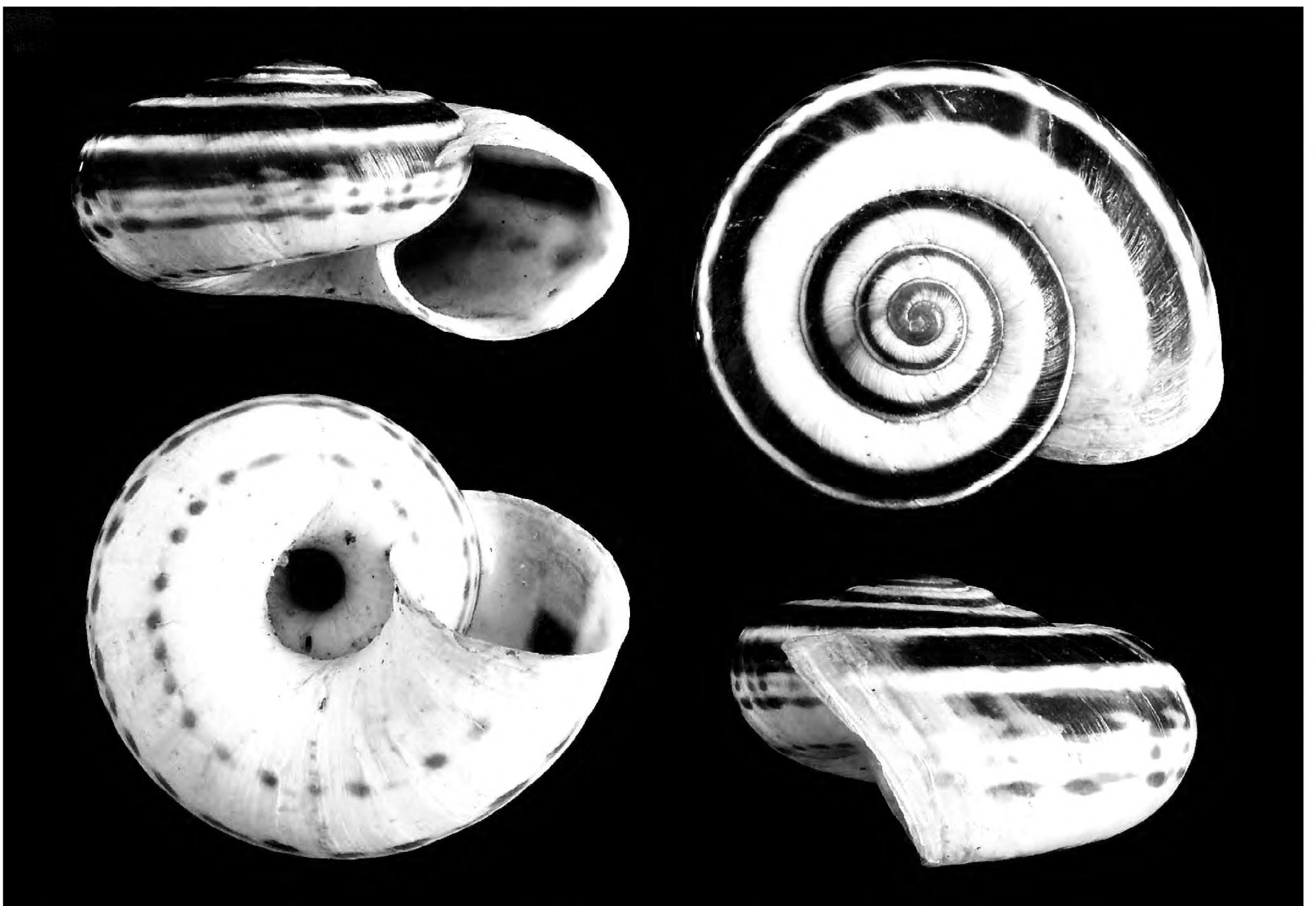
Voucher material is deposited in the mollusc collections of the New Brunswick Museum (Saint John, New Brunswick; NBM) (Table 1).

*Xerolenta obvia* is readily distinguished from all other snails in Ontario and not likely to be mistaken. The shell is relatively large (maximum diameter, ca. 20 mm), flattened, smooth, and white or grey white, generally with a brown band above the periphery of

<sup>1</sup> [*Helix*] *obvia* Menke (1828:13), nomen novum pro [*Helix*] *neglecta* Hartmann (1821:226), non *H[elix] neglecta* Draparnaud (1805:108), according to Gittenberger (1973), but see also Welter-Schultes (2012).



**Figures 1 and 2.** *Xerolenta obvia* aestivating on dead vegetation (knapweed, *Centaurea* sp. in Figure 1), Breezy Heights Road, Ottawa, Ontario. (Photographs by Aleta Karstad, Figure 1 and RGF, Figure 2).



**Figure 3.** Shell of *Xerolenta obvia*. Highway 7A roadside, west of Bethany; NBM 009057. Diameter: 15.5 mm. (RGF photograph.)



the last whorl and up to six brown, but often paler or interrupted, lines below (Figure 3). The apertural lip is not noticeably thickened or recurved. Reproductive anatomy of a specimen from Bethany was figured by Grimm and Wiggins (1975). Other publications useful for identifying this species include Kerney et al. (1983), Grimm et al. (2010), Welter-Schultes (2012), and Wiese (2014). *Cepaea nemoralis* (Linnaeus, 1758), a banded snail of similar size that is a widespread, abundant species over many areas of southern Ontario and common in

**Table 1.** New records of *Xerolenta obvia* in Ontario (1990–2014).

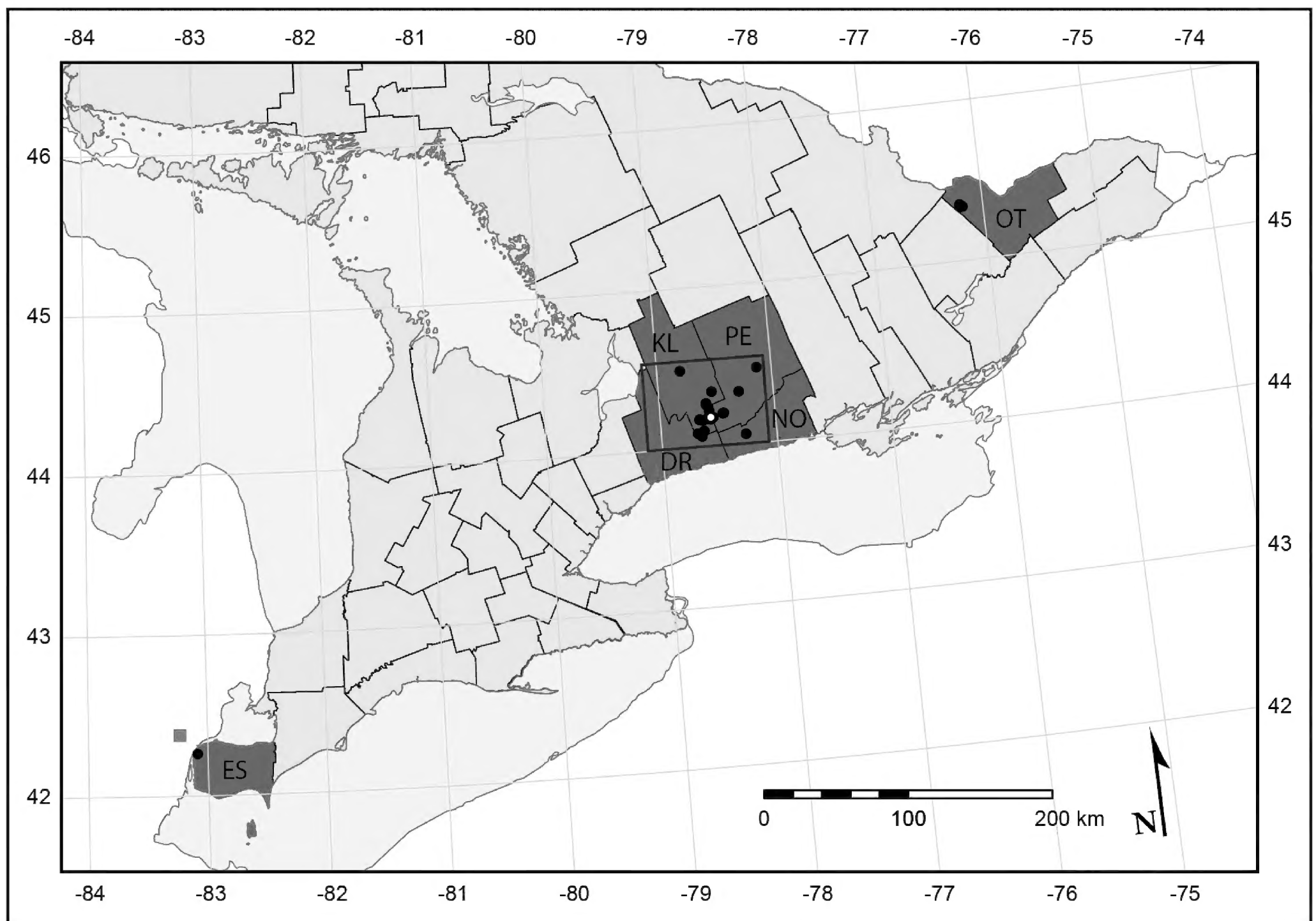
Date	Collector/observer	Locality	Latitude	Longitude	Voucher
<b>Essex County</b>					
5-IX-2013	MJO	Adjacent to Ojibway Black Oak woods, S of S end of woods, just W of railway tracks and Ojibway Parkway	42.2619	-083.0871	NBM 009060
<b>Durham Regional Municipality</b>					
29-III-2010	ES	Road, SE of Uxbridge	44.0507	-079.0655	
17-VII-2010	FWS, A. Karstad, A. Zieleman	Highway 7A at Forgotten Lane, 2.9 km WSW of Bethany	44.1735	-078.6019	
7-VI-2010	FWS, A. Karstad	Highway 7A at Highway 35, 7.4 km W of Bethany	44.1733	-078.6602	
7-VI-2010	FWS	Highway 7A at Highway 35, 7.4 km W of Bethany	44.1736	-078.6597	
7-VI-2010	FWS, A. Karstad	Highway 7A at Highway 35, 7.4 km W of Bethany	44.1736	-078.6599	
7-VI-2010	FWS	Highway 7A, 1.9 km WSW of Bethany	44.1766	-078.5903	NBM 009067
<b>Northumberland County</b>					
VII-2011	S. McGuire	Morton Road	44.0618	-078.2688	
<b>City of Kawartha Lakes</b>					
30-V-2013	MJO	Abandoned railway, S of Bethany	44.1793	-078.5551	
27-IV-1996	K. Struthers, FWS, A. Karstad, J.H. Schueler	Bethany	44.1827	-078.5665	
7-V-2006	MJO, M. Delisle-Oldham	Bethany	44.1816	-078.5612	NBM 009059
24-IV-1992	FWS, J.H. Schueler	Bethany, mid-curve SE of Highway 7A at railbed	44.1787	-078.5553	
24-IV-1992	FWS, J.H. Schueler	Bethany, 500 m SE of Highway 7A at railbed	44.1814	-078.5589	
30-V-2006	MJO	Bethany, abandoned railway	44.1826	-078.5655	NBM 009049
22-V-1995	MJO	Bethany, abandoned railway, ca. 100 m S of Highway 7A	44.1815	-078.5629	
11-X-1990	FWS	Bethany, Highway 7A at former railway	44.1825	-078.5651	NBM 009068
24-IV-1992	FWS, J.H. Schueler, A. Karstad	Bethany, Highway 7A at former railway	44.1825	-078.5651	
24-IV-1992	FWS	Bethany, rail embankment at hydro lines	44.1880	-078.5724	
27-IV-1996	FWS, A. Karstad, J.H. Schueler, K. Struthers	Bethany, Toronto Dominion Bank	44.1827	-078.5672	
25-VIII-2008	RGF, A. Karstad, FWS, J. Courteau	Bethany: trail at Highway 7A	44.1824	-078.5654	
10-VI-2010	MJO, S.R. Brinker, T. Rowe	County Road 34, N of Cameron	44.4858	-078.7965	NBM 009066
30-V-2013	MJO	Dranoel Road at Hillview Drive and Bethany Hills Road	44.2227	-078.5712	NBM 009065
30-V-2013	MJO	Drum Road	44.0880	-078.6829	
25-VIII-2008	FWS, A. Karstad, J. Courteau, RGF	E of Highway 7A at rail line, 0.2 km E of Bethany	44.1824	-078.5655	
10-VI-2010	MJO, S.R. Brinker, T. Rowe	Fee's Landing, Peace Road, just W of Emily Provincial Park Road	44.3425	-078.5366	NBM 009054
17-VI-2002	MJO	Fleetwood Creek, W of Omemee	44.2655	-078.5937	
17-VII-2010	FWS, A. Karstad, A. Zieleman	Highway 7A, 5.5 km WSW of Bethany	44.1668	-078.6332	
25-VIII-2008	RGF, A. Karstad, FWS	Highway 7A, W of Bethany, at Highway 35: across from Rolling Hills Public School	44.1606	-078.6587	NBM 009057
30-V-2013	MJO	Hogsback Road at Pigeon River	44.2721	-078.5939	
30-V-2013	MJO	N side of Boundary Road (Durham County Road 20)	44.0686	-078.6487	NBM 009062
8-VI-2006	MJO	Pontypool, active railway line	44.0978	-078.6321	NBM 009053
30-V-2006	MJO	Pontypool, active railway line on E edge of town near fire hall and ball diamond	44.1009	-078.6274	NBM 009058
30-V-2013	MJO	Pontypool, along railway	44.1005	-078.6280	NBM 009064
22-VIII-2002	FWS, A. Karstad, Premek Hamr	Ski Hill Road, 1.8 km NNW of Bethany	44.1976	-078.5755	NBM 009072
22-VIII-2002	FWS, A. Karstad, Premek Hamr	Highway 7A at creek, Bethany	44.1813	-078.5706	NBM 009073
25-V-2013	ES	Trans-Canada Trail, E of Omemee, between points of intersection of trail with Highway 7 and with Emily Park Road, ca. 450 m along trail N of Highway 7	44.3130	-078.5173	
15-IX-2012	ES	Trans-Canada Trail, northeast of Omemee, ca. 380 m along trail W of Acrevale Road	44.3131	-078.5402	
22-VIII-2002	FWS, A. Karstad, Premek Hamr	Ski Hill Road, 7.3 km N of Bethany	44.2475	-078.5775	NBM 009074
30-V-2013	MJO	Weston Road, E of Glengarry Road, S of Bethany	44.1700	-078.5615	
9-VIII-2007	Marilyn Van Gerven	[near] Lindsay	*	*	NBM 009052

Continued

Table 1. Continued.

Date	Collector/observer	Locality	Latitude	Longitude	Voucher
<b>Peterborough County</b>					
7-VI-2010	FWS, A. Karstad	Highway 7A, 1.6 km E of Bethany	44.1811	-078.5486	
7-VI-2010	FWS, A. Karstad	Highway 7A, 2.3 km E of Bethany	44.1823	-078.5393	
7-VI-2010	FWS, A. Karstad	Highway 7A at railway, 1.2 km E of Cavan	44.2030	-078.4545	NBM 009070
7-VI-2010	FWS, A. Karstad	Highway 115 at Highway 7A	44.2041	-078.4463	
30-III-2013	MJO & M. Delisle-Oldham	TV tower hill, N of Plati Avenue, Peterborough	44.3296	-078.3003	NBM 009063
7-X-2007	MJO et al.	Ca. 5 km north of Warsaw, W side of 3rd Line Road at Sawmill Road	44.4708	-078.1289	NBM 009051
<b>City of Ottawa</b>					
21-IX-2014	RGF	Panmure Road NE of Highway 417 overpass	45.3346	-076.1586	NBM 009061
29-X-2012	FWS, A. Karstad	Highway 417 (eastbound)	45.3367	-076.1818	
29-X-2012	FWS, A. Karstad	Highway 417, 6.1 km S of Kinburn	45.3371	-076.1828	
28-XI-2009	RGF, FWS	Highway 417, 6.1 km S of Kinburn	45.3371	-076.1828	
19-VIII-2013	FWS, A. Karstad	Breezy Heights Road (N side), 6.1 km S of Kinburn	45.3374	-076.1898	
23-IV-2010	FWS	Breezy Heights Quarry, 6.1 km S of Kinburn	45.3374	-076.1936	
19-VIII-2013	FWS, A. Karstad	Breezy Heights Road (N side), 6.0 km S of Kinburn	45.3376	-076.1900	
23-IV-2010	FWS	Breezy Heights Quarry, 6.1 km S of Kinburn	45.3376	-076.1940	
19-VIII-2013	FWS	Breezy Heights Road (S side), 6.0 km S of Kinburn	45.3378	-076.1904	
23-IV-2010	FWS	Breezy Heights Quarry, 6.0 km S of Kinburn	45.3381	-076.1922	
23-IV-2010	FWS	Breezy Heights Quarry, 6.0 km S of Kinburn	45.3382	-076.1947	
23-IV-2010	FWS	Breezy Heights Quarry, 6.0 km S of Kinburn	45.3384	-076.1957	
19-VIII-2013	FWS	Breezy Heights Road (S side), 5.9 km S of Kinburn	45.3385	-076.1913	
23-IV-2010	FWS	Breezy Heights Quarry, 5.9 km S of Kinburn	45.3388	-076.1967	
23-IV-2010	FWS	Breezy Heights Quarry, 5.9 km S of Kinburn	45.3390	-076.1971	
19-VIII-2013	FWS	Breezy Heights Road (S side), 5.9 km S of Kinburn	45.3391	-076.1920	
23-IV-2010	FWS	Breezy Heights Quarry, 5.9 km S of Kinburn	45.3393	-076.1980	
23-IV-2010	FWS	Breezy Heights Quarry, 5.8 km S of Kinburn	45.3399	-076.1987	
23-IV-2010	FWS	Breezy Heights Quarry, 5.8 km S of Kinburn	45.3404	-076.1973	
23-IV-2010	FWS	Breezy Heights Quarry, 5.8 km S of Kinburn	45.3405	-076.1969	
23-IV-2010	FWS	Breezy Heights Quarry, 5.8 km S of Kinburn	45.3405	-076.1994	
10-IX-2009	J. Fowler	Breezy Heights Road	45.3407	-076.1939	NBM 009056
28-XI-2009	RGF, FWS	Breezy Heights Road, 5.7 km S of Kinburn	45.3407	-076.1939	
23-IV-2010	FWS	Breezy Heights Quarry, 5.7 km S of Kinburn	45.3408	-076.1988	
8-IX-2012	FWS, A. Karstad	Highway 417 (W-bound), 5.7 km S of Kinburn	45.3408	-076.1899	
6-V-2010	FWS	Breezy Heights Rd, 5.6 km S of Kinburn	45.3421	-076.1965	
22-X-2013	FWS, Barry Cottam	Highway 417 (SE-bound), 5.3 km S of Kinburn	45.3442	-076.1974	
19-VIII-2013	FWS	Breezy Heights Road (S side), 5.3 km S of Kinburn	45.3447	-076.1995	
19-VIII-2013	A. Karstad, FWS	Breezy Heights Road (S side), 5.3 km S of Kinburn	45.3447	-076.1995	
19-VIII-2013	FWS, A. Karstad	Breezy Heights Road (S side), 5.3 km S of Kinburn	45.3447	-076.1995	
19-VIII-2013	FWS	Breezy Heights Road (SE side), 5.4 km SSW of Kinburn	45.3448	-076.2049	
19-VIII-2013	FWS	Breezy Heights Road (SE side), 5.3 km SSW of Kinburn	45.3452	-076.2045	
19-VIII-2013	FWS	Breezy Heights Road (SE side), 5.3 km SSW of Kinburn	45.3453	-076.2042	
28-V-2011	FWS, A. Karstad	Highway 417, 5.2 km S of Kinburn	45.3456	-076.2000	
19-VIII-2013	FWS	Breezy Heights Rd, 5.3 km SSW of Kinburn	45.3457	-076.2035	
11-IX-2012	RGF	Breezy Heights Road	45.3457	-076.2009	NBM 009055
19-VIII-2013	FWS	Breezy Heights Road (SE side), 5.3 km SSW of Kinburn	45.3458	-076.2033	
19-VIII-2013	FWS	Breezy Heights Road (S side), 5.2 km S of Kinburn	45.3459	-076.2012	
19-VIII-2013	FWS	Breezy Heights Road (NW side), 5.2 km S of Kinburn	45.3459	-076.2012	
19-VIII-2013	FWS	Breezy Heights Road (S side), 5.2 km SSW of Kinburn	45.3460	-076.2016	
19-VIII-2013	FWS	Breezy Heights Road (SE side), 5.2 km SSW of Kinburn	45.3460	-076.2029	
19-VIII-2013	FWS	Breezy Heights Rd (NW side), 5.2 km SSW of Kinburn	45.3461	-076.2028	
19-VIII-2013	FWS	Breezy Heights Road (SE side), 5.2 km SSW of Kinburn	45.3462	-076.2022	
23-IV-2010	FWS, A. Karstad	Highway 217, 5.1 km S of Kinburn	45.3465	-076.2003	NBM 009069
28-V-2011	FWS, A. Karstad	Highway 417, 5.2 km SSW of Kinburn	45.3464	-076.2016	
28-V-2011	FWS, A. Karstad	Highway 417, 5.1 km SSW of Kinburn	45.3465	-076.2016	
28-V-2011	FWS, A. Karstad	Highway 417, 5.1 km S of Kinburn	45.3469	-076.2011	
8-XII-2011	FWS, A. Karstad	Highway 417, 5.1 km S of Kinburn	45.3469	-076.2011	
8-XII-2011	FWS, A. Karstad	Highway 417, 5.1 km SSW of Kinburn	45.3473	-076.2018	
8-XII-2011	FWS, A. Karstad	Highway 417, 5.0 km SSW of Kinburn	45.3481	-076.2035	
8-XII-2011	FWS, A. Karstad	Highway 417, 4.9 km SSW of Kinburn	45.3495	-076.2060	
21-IX-2014	RGF	Along Highway 17, SE of Atrim, between road and Highway 417	45.3504	-076.2071	

\* Geoposition not recorded (for the purpose of mapping subsequently approximated using from Google Earth™).



**Figure 4.** Distribution of *Xerolenta obvia* in Ontario. White circle = first recorded site at Bethany, City of Kawartha Lakes. Red square = Detroit, Michigan, USA population. County or equivalent county-like divisions where *X. obvia* is recorded are yellow-green. Rectangle = area of coverage of Figure 5. Abbreviations: ES, Essex County; DR, Durham Regional Municipality; KL, City of Kawartha Lakes; NO, Northumberland County; PE, Peterborough County; OT, City of Ottawa.

similar areas and habitats, might be confused by those with little experience in recognizing terrestrial snail species. Shells of *C. nemoralis* are mostly straw-yellow, pinkish, or brown, with or without brown bands. The apertural lip, which is purple-brown, is thickened and recurved in adults. The umbilicus is closed in adults.

Combining close (<1 km) and apparently connected sites, perhaps as many as 23 occurrences of *Xerolenta obvia* are known from Ontario. Some of the closest sites may be connected because *X. obvia* can tolerate and thrive in hot, dry, rocky, disturbed habitats that would normally be considered inhospitable and barriers to dispersal for other terrestrial snail species. *Xerolenta obvia* occurs across southern Ontario from Essex County in the west, east to the Ottawa region (Table 1; Figure 4). We discuss these occurrences in three groups as follows.

#### Essex County:

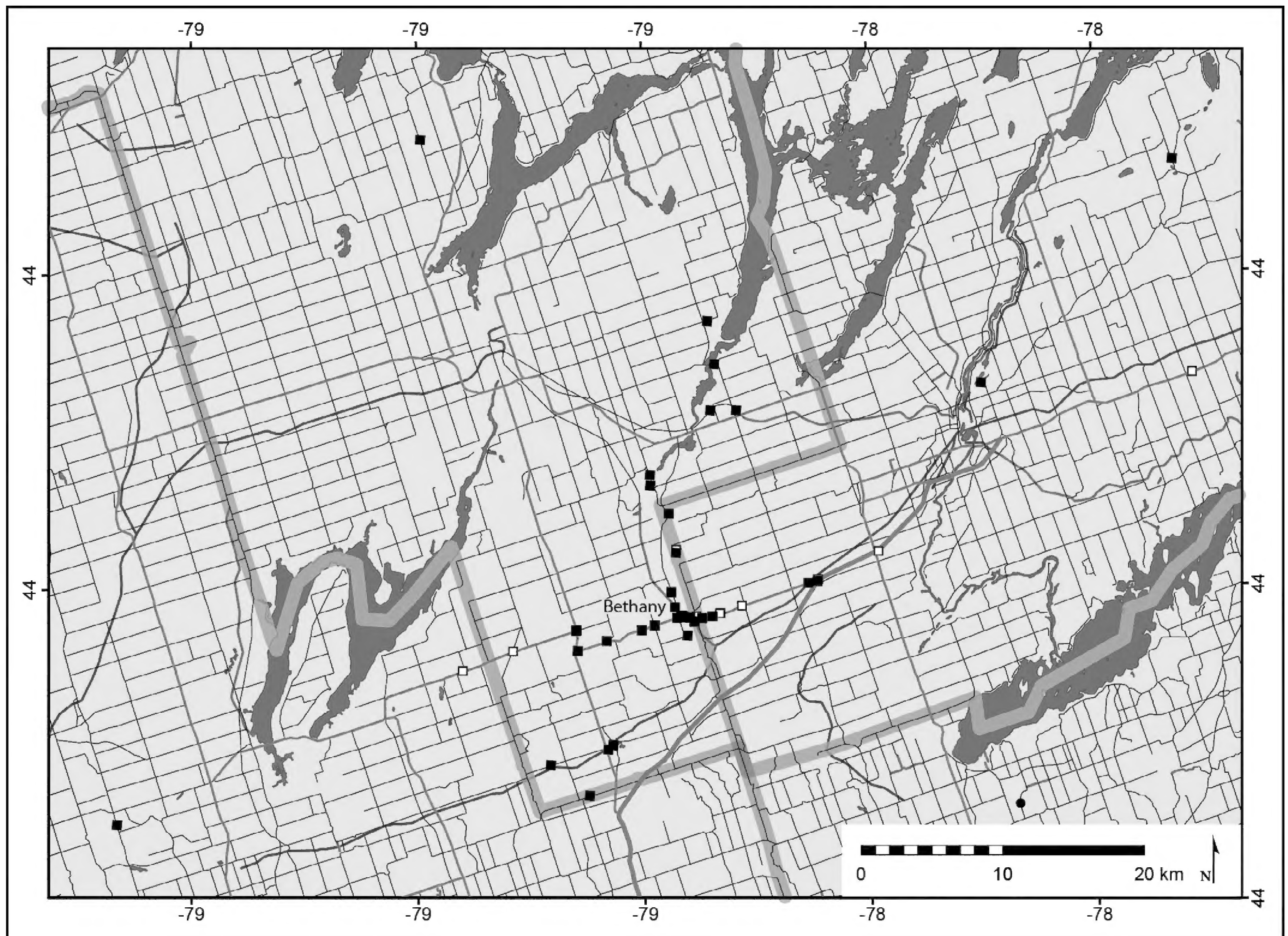
The westernmost record of *Xerolenta obvia* in Ontario is in the City of Windsor, Essex County. The occurrence was found by MJO in 2012 just south of the Black Oak Heritage Park, in an area of building rubble from a

demolished light-industrial building surrounded by old-field and shrubby growth. The site was highly disturbed in the past, and was transitioning to weedy old-field type plant species. This population is about 17 km southeast of the first known U.S. population in Detroit, Michigan. It is also within about 100 m of an active railway line and 175 m from the nearest road. *Xerolenta obvia* was very localized here, with thousands of empty shells and dozens or hundreds of live snails, but only within a very restricted area. This is the first southwestern Ontario record for this species.

City of Kawartha Lakes, Peterborough County, Northumberland County, and Durham Regional Municipality:

The majority of records (about 21 discrete occurrences) of *Xerolenta obvia* in Ontario are from the City of Kawartha Lakes (formerly Victoria County) and Peterborough County (Figure 5). Our fieldwork often focused in the region surrounding the original Bethany site, and thus, there is a cluster of records around Bethany. The greater number of occurrences around the Bethany site than in other areas is therefore possibly due to





**Figure 5.** Presence of *Xerolenta obvia* in City of Kawartha Lakes, Peterborough County, Northumberland County, and Durham Regional Municipality, Ontario, Canada (boundaries marked by yellow lines), with some additional negative records (by one of us, FWS) shown. Black square = present; white square = absent. Arterial highways and roads are red; lesser roads are grey; trails are brown; railways are purple.

greater search effort. If the Bethany occurrence was the only one present in the late 1960s and early 1970s it is plausible that other occurrences in the City of Kawartha Lakes, Peterborough County, Northumberland County, and Durham Regional Municipality originated from it or the farm just west of the village centre that was mentioned by Grimm and Wiggins (1975).

Farther from Bethany, known sites are more scattered, with the most distant one being ca. 47 km away (Figure 4), but as there is much potential habitat along roads and in old fields in this area (and elsewhere in southern Ontario), we anticipate that more sites will be discovered.

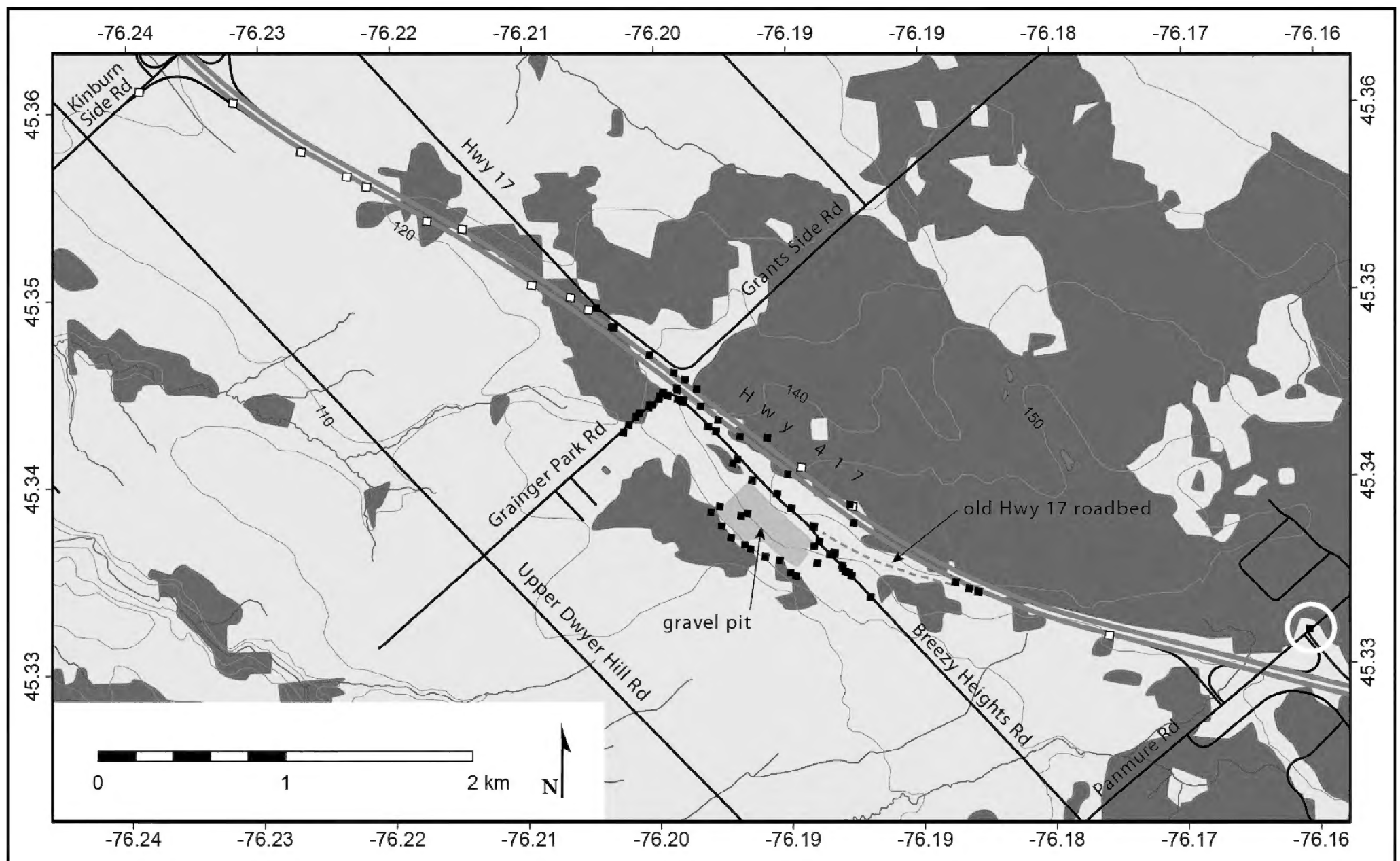
#### City of Ottawa:

Along several kilometres of Highway 417 and adjacent roads in rural Ottawa (Figure 6), there is what probably is a single large occurrence of *Xerolenta obvia* (although the most southeastern site is separate from the others by >1 km; see below), the only one known in eastern Ontario. Highway 417 dissects this population. Repeated visits have allowed us to better

understand the extent of this occurrence, which is large. We document it here so that any future changes in extent can be noted later.

*Xerolenta obvia* was first noticed by one of us (RL) in 2009 along the entire section of Breezy Heights Road, which once was Highway 17, from 45.3385° N, 076.1910° W to 45.3463° N, 076.2026° W, a distance of 1.25 km. The snails are on both sides of the road, with densely-populated sections scattered at random throughout the length. Probably the densest part is at the extreme west end, where Breezy Heights Road turns southwest into Grainger Park Road. The entrance to and perimeter of the Breezy Heights Quarry, on the south side of the road, has many *X. obvia*.

Near the eastern end of Breezy Heights Road, there is a curving grassy strip leading east towards Highway 417; this was a former section of Old Highway 17 which was torn up during the construction of the new 417 freeway. *Xerolenta obvia* are present along the entire length of this strip, with a very dense population near the eastern end, mostly on tall dead White Sweet-clover (*Melilotus albus* Medik.), sometimes >40 snails



**Figure 6.** Presence/absence of *Xerolenta obvia* along Highway 417 and adjacent roads, Ottawa, Ontario, Canada. Black square = present; white square = absent. In some cases, snails were found in areas between points shown on the map. For example, the entire length of the old Highway 17 roadbed had *X. obvia*. It is unknown if the single record from Panmure Road (in a white circle), northeast of Highway 417 is connected to the other sites as a continuous distribution.

per plant. This strip extends for 1 km from 45.3398° N, 076.1924° W to 45.3366° N, 076.1812° W.

To the north of Highway 417, the road called Highway 17 also has *Xerolenta obvia*. This section of the old Highway 17 (Highway 417 replaced it as the main highway north of Ottawa) runs east from Arnprior, through Antrim, and makes a hard left onto Grants Side Road when it comes to the new highway. The snails start west of Grants Side Road, and continue to the corner, also extending about 0.5 km along a rough track which parallels Highway 417 on the north side, from 45.3495° N, 076.2059° W to 45.3441° N, 076.1955° W, again almost exactly 1 km.

One of us (FWS) has surveyed along Highway 417 and found *X. obvia* along 1.8 km of the southwest (eastbound) side of the highway proximal to the quarry, and present along 560 m of the northeast (westbound) side of the highway, across from the quarry. The range of the snails on the northeast side of the new highway, around the old two-lane Highway 17 where the new highway crosses its route, is offset 410 m northwest from that on the westbound (quarry) side. There is no obvious habitat limitation to the range on either side of the highway (note that all these distances are straight-line, and that the road curves a little, and is about 70 m wide here).

In September 2014, RGF found *Xerolenta obvia* along

the roadside of Panmure Road, just northeast of the Highway 417 interchange. This is about 1.9 km east-southeast from the closest record along Highway 417 (at the old roadbed). We do not know if this site is disjunct from, or continuously connected to, the main presence of the species to the west-northwest. FWS observed no *X. obvia* at one site approximately midway along Highway 17.

*Xerolenta obvia* is a calciphile that lives in Ontario in open, dry, grassy sites along roads and railways, and in fallow fields. In central Europe, where it is also found in vineyards, around ruins, in dunes, and on walls, *X. obvia* is largely synanthropic (Kerney et al. 1983; Welter-Schultes 2012). One characteristic of most populations of this species is the large numbers of snails and dead shells; populations can be large, sometimes covering several hectares. This seems not to be the effect of a population explosion of an unchecked introduced species but rather is normal for the species. Dense colonies of snails are typical within the native (or near-native) range of the species in Europe as well (Pfeiffer 1841; Welter-Schultes 2012).

Large numbers of dead shells usually litter the ground once a population is established. A study in Greece reported that *Xerolenta obvia* live for one or two years, depending on climatic conditions, and die soon



after reproducing (Larazidou and Chatziioannou 2005). Thus, as a relatively large-shelled species with a short live span, large numbers of dead shells are present and readily noticeable. Shell of other terrestrial snail species may persist for one or more years, or even longer on calcareous ground (Pearce 2008), so that it is possible that the large number of shells of *X. obvia* is cumulative over several generations and years.

*Xerolenta obvia* aestivates on the stems of tall plants. While occasionally on dry grass stems, snails seem to favour much stronger dried plants and at the Ottawa location were almost always on these, especially White Sweet-clover, knapweed (*Centaurea* sp.), Queen Anne's Lace (*Daucus carota* L.), and Chicory (*Cichorium intybus* L.).

Although we cannot be certain that there were not other populations of *Xerolenta obvia* around southern Ontario during the 1970s when this species was first noticed, it is probable that over the last four decades the species has spread. The usually dense populations, apparently persisting dead shells, and the tendency of snails to aestivate well off the ground on the stems of plants (Figure 1) make this species especially conspicuous, and as a relatively large-bodied snail, it would be a prime candidate for citizen science-based monitoring. It seems likely that *Xerolenta obvia* will continue to expand its range in southern Ontario.

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